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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/698,219	10/30/2000	Taichi Kobayashi	Q61467	6374

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SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3202

EXAMINER	
GOFF II, JOHN L	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 10/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/698,219	KOBAYASHI ET AL.	
	Examiner	Art Unit	
	John L. Goff	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 7-32* is/are pending in the application.

4a) Of the above claim(s) *12-32* is/are withdrawn from consideration.

5)☒ Claim(s) *1 and 2* is/are allowed.

6)☒ Claim(s) *3,4,7(3), and 8-11* is/are rejected.

7)☒ Claim(s) *7(1)* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/3/04 has been entered.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102/103

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 8 and 11 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over the admitted prior art (Specification pages 1 and 2).

The admitted prior art is directed to a laminate for use in bonding to the surface of a building material or a solar cell for surface protection, impartment of stain resistance, sealing and the like. The admitted prior art teaches the laminate comprises a fluorine resin bonded to a crosslinking elastic adhesive body, e.g. ethylene-vinyl acetate copolymer (EVA) or the like. The admitted prior art teaches subjecting the fluorine resin to a corona discharge prior to bonding with the crosslinking adhesive body to produce radical-generating functional groups on and within the surface of the fluorine resin. The radical-generating functional groups on and within the surface of the fluorine resin create a strong bond between the fluorine resin and the crosslinking adhesive body (Specification page 1, lines 22-37 and page 2, lines 1-7). As to the absorbance, it is noted that absorbance is directly related to the number of radical-generating functional groups on the surface of the fluorine resin such that because the admitted prior art is solely directed to the formation of radical-generating functional groups on the surface of the fluorine resin, e.g. by corona discharge, and the method disclosed by the admitted prior art is consistent and in agreement with that claimed and applicants specification it appears the surface of the fluorine resin taught by the admitted prior art would have the claimed absorbance at 360 nm. In the event the surface does not have the claimed absorbance due to a lack of radical-generating functional groups, it is noted the admitted prior art is solely directed to a method for creating a fluorine resin having a surface containing a number of radical-generating functional groups sufficient to create a strong adhesive surface such that it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally provide a

number of radical-generating functional groups on the surface sufficient to create a strong adhesive surface which would directly result in the surface having the claimed absorbance at 360 nm.

Claim Rejections - 35 USC § 103

5. Claims 3, 4, and 7(3) are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of Kusano et al. (U.S. Patent 5,466,424), Yoshikawa et al. (U.S. Patent 6,046,403), or Ryan (U.S. Patent 3,030,290) in view of Kreil et al. (U.S. Patent 4,594,262).

Kusano et al. disclose a corona discharge surface treating method for a fluorine resin, e.g. ethylene-tetrafluoroethylene copolymer (ETFE), comprising subjecting the ETFE to the corona discharge in an atmosphere consisting essentially of an inert gas such as nitrogen to impart radical-generating functional groups to the surface of the resin (Column 1, lines 8-10 and Column 4, lines 6-7, 18-21 and 33-35). Yoshikawa et al. disclose similar to Kusano et al., i.e. subjecting a fluorine (e.g. ETFE) resin to a corona discharge in an inert gas (e.g. nitrogen) atmosphere to activate the surface of the resin (Column 5, lines 27-30). Ryan discloses similar to Kusano et al., i.e. subjecting a fluorine resin to a corona discharge in an inert gas (e.g. nitrogen) atmosphere to impart radical-generating functional groups to the surface of the resin (Column 1, lines 47-51 and Column 2, lines 18-21). Neither Kusano et al., Yoshikawa et al., nor Ryan specifically teach the oxygen content of the inert gas atmosphere, it being noted an inert gas atmosphere would intrinsically have some small oxygen concentration above 0 parts per million (ppm). One of ordinary skill in the art at the time the invention was made would have readily appreciated that the inert gas atmosphere taught by any one of Kusano et al., Yoshikawa et al., or

Ryan would contain an oxygen concentration of 100 ppm or less and preferably between 10 and 40 ppm as it was conventional and well taken in the art that an inert gas atmosphere is defined as having a small concentration of oxygen of 100 ppm or less but greater than 5 ppm as shown for example by Kreil et al.

Kreil et al. disclose an adhesion promoting, surface treating process in an inert gas atmosphere. Kreil et al. teach that by inert atmosphere is meant an environment comprising a gas such as nitrogen gas and containing no more than 100 ppm of oxygen and preferably between 10 and 40 ppm oxygen it being noted concentrations below 5 ppm are unduly expensive (Column 1, lines 9-10 and Column 3, lines 28-32 and 66-68 and Column 4, lines 1-4 and Column 5, lines 2-4).

6. Claims 3, 4, 7(3), 8, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of any one of Kusano et al., Yoshikawa et al., or Ryan and Kreil et al.

The admitted prior art is described above in full detail. The admitted prior art is silent as to the atmosphere for performing the corona discharge process. It would have been obvious to one of ordinary skill in the art at the time the invention as made to perform the corona discharge process taught by the admitted prior art in an atmosphere comprising an inert gas such as nitrogen as it was well known conventional in the art to do so to produce radical-generating functional groups on the surface of the fluorine resin as shown for example by any one of Kusano et al., Yoshikawa et al., or Ryan. Kusano et al., Yoshikawa et al., and Ryan are described above in full detail above.

The admitted prior art as modified by any one of Kusano et al., Yoshikawa et al., or Ryan do not specifically teach the oxygen content of the inert gas atmosphere, it being noted an inert gas atmosphere would intrinsically have some small oxygen concentration above 0 parts per million (ppm). One of ordinary skill in the art at the time the invention was made would have readily appreciated that the inert gas atmosphere taught by the admitted prior art as modified by any one of Kusano et al., Yoshikawa et al., or Ryan would contain an oxygen concentration of 100 ppm or less and preferably between 10 and 40 ppm as it was conventional and well taken in the art that an inert gas atmosphere is defined as having a small concentration of oxygen of 100 ppm or less but greater than 5 ppm as shown for example by Kreil et al. Kreil et al. is described above in full detail.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art as applied above in paragraph 4 or the admitted prior art, any one of Kusano et al., Yoshikawa et al., or Ryan, and Kreil et al. as applied above in paragraph 6, and further in view of Krause et al. (U.S. Patent 5,958,532).

The admitted prior art (and the admitted prior art as modified by any one of Kusano et al., Yoshikawa et al., or Ryan and Kreil et al.) teaches all of the limitations in claim 9 as applied above except for a specific teaching of when the elastic adhesive body is crosslinked, it being noted it appears that in order to bond the fluorine resin to the elastic adhesive body contacting/laminating must occur before the elastic adhesive body is cured. In any event, it would have been well within the purview of one of ordinary skill in the art at the time the invention was made to crosslink the adhesive body taught by the admitted prior art (or the admitted prior art as modified by any one of Kusano et al., Yoshikawa et al., or Ryan and Kreil

et al.) after contacting/laminating with the fluorine resin as this was a well known and conventional technique in the art as shown for example by Krause et al. and only the expected results would be achieved.

Krause et al. are directed to bonding fluoropolymer resin layers to thermosetting or thermoplastic elastomer layers wherein the fluoropolymer layers undergo corona discharge treatment in air to increase their bond strength. Krause et al. teach providing a layer of fluoropolymer resin, such as ETFE, subjecting the fluoropolymer layer to a corona discharge treatment in air, clamping/laminating the fluoropolymer layer to an elastomer layer, and heat treating the clamped layers at 180 °C for 30 minutes to cure/crosslink the elastomer layer and strengthen the bond between the fluoropolymer layer and the elastomer layer (Column 3 lines 64-67 and Column 5, lines 19-27 and 44-47 and Column 11, lines 3-7 and 10-12).

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art as applied above in paragraph 4 or the admitted prior art, any one of Kusano et al., Yoshikawa et al., or Ryan, and Kreil et al. as applied above in paragraph 6, and further in view of Kataoka et al. (U.S. Patent 6,307,145).

The admitted prior art (and the admitted prior art as modified by any one of Kusano et al., Yoshikawa et al., or Ryan and Kreil et al.) teaches all of the limitations in claim 10 as applied above except for a teaching of how the elastic adhesive body (EVA) is crosslinked. One of ordinary skill in the art at the time the invention was made would have readily appreciated crosslinking the elastic adhesive body taught by the admitted prior art (or the admitted prior art as modified by any one of Kusano et al., Yoshikawa et al., or Ryan and Kreil et al.) using a radical initiator such as organic peroxide as it was well known in the art to crosslink EVA in this

manner as shown for example by Kataoka et al. to prevent deformation or creep in the EVA at high temperatures.

Kataoka et al. are directed to a solar cell including a layer of crosslinked EVA. Kataoka et al. teach the EVA is crosslinked with an organic peroxide to prevent deformation or creep in the EVA at high temperatures (Column 6, lines 1-3 and 12-15).

Allowable Subject Matter

9. Claims 1 and 2 are allowed.

10. Claim 7 is multiple dependent claim, and thus, claim 7 is objected to as being dependent upon a rejected base claim, i.e. claim 3. However, claim 7 would be allowable if rewritten as dependent from only claim 1 and not claim 3.

11. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach or suggest a method of surface treating a fluorine resin to produce radical-generating functional groups on a surface of the resin such that **in a subsequent step the absorbance at the surface is measured by iodometry and the absorbance at 360 nm is at least 0.02/100 cm^2**. It is noted Kusano et al., Ryan, and Yoshikawa et al. are exemplary of the well known and conventional technique of subjecting a fluorine resin to a corona discharge treatment in an inert (e.g. nitrogen) gas atmosphere to produce radical-generating functional groups on the surface of the resin wherein Kreil et al. is cited to show it is conventional in the art that an inert gas atmosphere such as a nitrogen atmosphere is taken to have 100 ppm or less (e.g. preferably 10-40 ppm) oxygen. The corona discharge treatments performed by Kusano et al., Ryan, and Yoshikawa et al. are the same as that claimed and they

are consistent and in agreement with applicants specification (See the examples and in particular page 25 under the heading Corona discharge treatment) such that it appears the surface treated fluorine resins taught by Kusano et al., Ryan, and Yoshikawa et al. would inherently have the claimed absorbance values. However, none of the references disclose specifically measuring the absorbance of the surface treated resins by iodometry after performing the corona discharge.

Response to Arguments

12. Applicant's arguments with respect to claims 3, 4, 7(3), and 8-11 have been considered but are moot in view of the new ground(s) of rejection. The previous rejections using Shimada et al. are withdrawn in view of applicants amendments, arguments, and declaration wherein applicants have asserted the corona discharge treatment (in an inert gas and organic functional group atmosphere) disclosed by Shimada et al. does not form radical-generating functional groups (and thus, no absorbance value) on a surface of the fluorine resin. The 35 USC 102/103 rejection of claims 8 and 11 over the admitted prior art is maintained as claim 8 does not specifically require performing the iodometry measurement, it being noted while applicants have argued the admitted prior art does not disclose performing the iodometry measurement, applicants have not argued that the process of the admitted prior art results in an absorbance below that claimed.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571) 272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John L. Goff

JEFF H. AFTERGUT
PRIMARY EXAMINER
GROUP 1300